Description

The invention relates to a method as described generically in Patent Claim 1 and a mobile transceiver as described generically in Patent Claim 4.

Digital data can be exchanged among the users of a cellular radio network or mobile telephone system. The mobile telephone system can either be developed in accordance with the GSM standard (radio transmission system in accordance with the recommendations of the CEPT subcommittee Group Special Mobile) or in accordance with the DECT standard (Digital European Cordless Telecommunication).

The exchanged digital data can be digitized speech signals, fax communication data or general data for stationary or mobile data processing systems such as personal computers or notebooks. The mobile telephone system can also be used to transmit short messages consisting of alphanumerical characters and symbols for display on the mobile transceivers.

Mobile transceivers are becoming smaller and smaller, so that they now fit comfortably in the pockets of pants or jackets. To check for or read short messages, the transceiver must be removed from the pocket.

The invention addresses the problem of making the mobile transceiver easier to handle.

The invention solves this problem for a method by the properties outlined in Patent Claim 1 and for a mobile transceiver by the properties outlined in Patent Claim 4.

By displaying the symbols on the face of a wristwatch, the messages can be easily read.

Dialing is also made easier, e.g. in that the mobile transceiver does not need to be removed from the pocket until a connection is established.

In the following, the invention is described using a sample design shown in the drawing.

The only figure shows a mobile transceiver MF in contact with a mobile radio system (not represented) via an antenna A. The antenna A is wired to a radio unit FE featuring a high-frequency transmitter and receiver. The radio unit FE is connected to a logic circuit LS. The logic circuit LS digitally processes the data signals transmitted between the mobile transceiver MF and the mobile telephone system, and controls the mobile transceiver MF itself.

The mobile transceiver MF has a user interface BO1 that might feature a keyboard and/or track ball, for example. The design also calls for a display unit AE1, e.g. a graphic liquid crystal display.

A signal transformer unit SU processes the analog speech signals that are input via a microphone MK1 and output via a loudspeaker L1. For this purpose, the signal transformer unit SU features A/D and D/A converters or codec circuits.

The logic circuit LS, the user interface BO1 with the display unit AE1 and the signal transformer unit SU as well as a data interface DS1 are all connected to one another through a data bus DB1.

For power, the mobile transceiver MF features an electrical power supply SV.

According to the invention, alphanumeric characters and/or visual signaling symbols and/or control signals arriving for display at a mobile transceiver MF are represented on an external display unit AE2. This display unit AE2 is integrated into a wristwatch UA or is the existing display face of the watch UA.

The alphanumeric characters are chiefly used to display the short message. The visual signaling symbol might be a symbol appearing on the display unit AE2 to signal an incoming call on the mobile transceiver MF. Another symbol shows that a connection has been established or that the called party has picked up the call. Control signals indicate the battery level or signal strength, for example.

The invention's method involves sending the data associated with these characters, symbols and signals via the data bus DB1 to the data interface DS1 and onto a transmitter unit SE1. The transmitter unit SE1 is preferably wireless and transmits

this data to the wristwatch UA. The transmitter unit SE1 connects the mobile transceiver MF to an external display face. The transmitter unit SE1 can work in either the high-frequency or ultrasonic range. It can also employ an inductive coupling.

The wristwatch UA features a display unit AE2 and a receiver unit EE2 for realization of the method outlined by this invention. The data received by the watch UA is transmitted by the receiver unit EE2 to the display unit AE2 and shown there. The required control unit is of minor significance to the invention and not explicitly represented in the figure. This function can be assumed by a control already on the watch, for example.

The receiver unit EE2 is connected to a data interface DS2, which in turn is connected to the display unit AE2 via a data bus DB2. If required, a user interface BO2 may be connected to the data bus DB2 and a transmitter unit SE2 to the data interface DS2. These circuit elements will be further discussed below.

A loudspeaker L1 or beeper may also be accommodated in the watch UA to output the signal received by the mobile transceiver MF, e.g. by ringing. The loudspeaker L1 is connected to the receiver unit EE2 (not shown in the figure), e.g. via a digital-analog converter. The data for the signal is transmitted in the mobile transceiver MF from the logic circuit LS via the data interface DS and the transmitter unit SE1 to the watch UA.

Another development of the invention provides for a user interface BO2 in the watch UA. This can be used to initiate dialing, for example. Telephone numbers can be entered by voice dialing using a microphone MK2. The user interface BO2 and the microphone MK2 with a downstream signal transformer unit (not represented in the figure) are connected to a transmitter unit SE2. The transmitter unit SE2 is in turn in contact (preferably wirelessly) with a receiver unit EE1 integrated into the mobile transceiver MF. The receiver unit EE1 is connected to the data interface DS and transmits the data corresponding to the signals and numbers that were input to the logic circuit LS.

Naturally, an authentication is carried out before data is transmitted between the mobile transceiver MF and wristwatch UA. This ensures that data is transmitted only from the correct watch UA to the correct mobile transceiver MF and vice versa. This prevents interferences between the devices—wristwatch UA and mobile

transceiver MF—for example, when users are standing in close proximity to one another.

List of Reference Markings

MF Mobile transceiver

A Antenna

LS Logic circuit

AE1, 2 Display unit

BO1, 2 User interface

SU Signal transformer unit

DS1, 2 Data interface

DB1, 2 Data bus

L1, 2 Loudspeaker

MK1, 2 Microphone

SE1, 2 Transmitter unit

EE1, 2 Receiver unit

AU Wristwatch

Patent Claims

1. Method for representing alphanumeric characters and/or visual signaling symbols and/or control signals arriving for display at a mobile transceiver (MF), characterized in that such characters/symbols/signals, after transmission to a wristwatch (AU), are represented on said wristwatch via a display unit (AE2).

2. Method according to Claim 1, characterized in that acoustic signaling symbols are transmitted from the mobile transceiver (MF) to the wristwatch (AU) and output there.

3. Method according to Claim 1 or 2, characterized in that control and/or dialing information input through the wristwatch (AU) is transmitted to the mobile transceiver (MF).

4. Mobile transceiver (MF) for the transmission of digital data via radio with the central base station of a cellular wireless system and/or via said base station to additional users connected to the wireless system, with a logic circuit (LS) for digital signal processing and control of the wireless system's data communication with the mobile transceiver (MF), and featuring a transmitter unit (SE1) connected to the logic circuit (LS) for wireless integration of an external display unit (AE2) integrated in a wristwatch (AU).

5. Mobile transceiver (MF) according to Claim 4, characterized in that a receiver unit (EE1) is in contact with the logic circuit (LS) for wireless integration of an external user interface (BO2) integrated in a wristwatch (AU).

See 1 page of drawings